1086-05-1730   **David Clark*** (`dcclark@umn.edu`). *What makes finite geometry designs so special?*

Finite geometries provide some of the most highly structured examples of combinatorial designs. Hamada conjectured that, among all designs with the same parameters, finite geometry designs are the unique designs whose incidence matrices have the minimum p-rank. This turns out to be false – but only sometimes! In this talk, we will describe certain classes of designs which have highly geometric properties, including minimum p-rank, but which are not finite geometry designs. We will examine the geometric properties of these *pseudo-geometric designs*, focusing on the question: What specific structural properties are necessary in order to construct counterexamples to Hamada's conjecture? (Received September 24, 2012)